

# PEERING INTO THE ABYSS

## Non-State Actors and the 2016 Proliferation Environment

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**KEYWORDS:** WMD proliferation; Terrorism; Globalization; Non-state actors; Proliferation market substructure

The administration of George W. Bush has successfully reoriented national policy and convinced the international community of the absolute necessity of denying weapons of mass destruction (WMD) to terrorist groups. In addition to utilizing the tools of existing export control regimes, Washington promulgated the Proliferation Security Initiative (PSI) and helped push through United Nations Security Council (UNSC) Resolution 1540 to expand the toolkit available to states to prevent the spread of dangerous technologies and weapons to terrorist groups.

While these efforts are long overdue, they address only one aspect of the proliferation threat posed by non-state actors. Current efforts focus on the "demand" side of proliferation from terrorists but inexplicably leave unaddressed the role that a growing variety of non-state actors may play in shaping the supply side of an emerging 2016 proliferation market substructure. The proliferation supply network established by Pakistani scientist A. Q. Khan provides a precursor to a dangerous new proliferation

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Today's focus on the demand side of nuclear and WMD proliferation from terrorist adversaries is understandable. The September 11, 2001 (9/11) attacks by Al Qaeda and the subsequent attacks on innocent civilians in such far-flung places as Bali, Istanbul, Madrid, London, Riyadh, and elsewhere confirmed the worst fears of many strategists who argued that a new age of unrestricted warfare involving non-state actors had arrived.<sup>1</sup> The Bush administration articulated these fears in its 2002 National Security Strategy, describing an international environment dotted with adversaries not subject to traditional notions of deterrence or morality and which may have access to a dangerous array of new capabilities that could cause death and destruction on a massive scale. Specifically, the report identified the "intersection of radicalism and technology" as the greatest threat to the international community, backing up this assertion with statements that non-state actors, or terrorist groups, were actively seeking weapons capable of inflicting mass casualties.<sup>2</sup> Former U.S. Navy Secretary and prominent 9/11 Commission member John Lehman put it most concisely in a recent *Washington Post* editorial: "The greatest terrorist threat on the home front is, of course, the use of weapons of mass destruction by Islamists."<sup>3</sup>

Intelligence assessments back these statements. U.S. Director of National Intelligence John Negroponte told the Senate Armed Services Committee in February 2006 that Al Qaeda "remains interested in acquiring chemical, biological, radiological, and nuclear materials or weapons to attack the United States, U.S. troops and U.S. interests worldwide." Negroponte added: "Indeed, today, we are more likely to see an attack from terrorists using weapons or agents of mass destruction than states, although terrorists' capabilities would be much more limited." According to Negroponte, "nearly 40 terrorist organizations, insurgencies, or cults have used, possessed, or expressed an interest in chemical, biological, radiological, or nuclear agents or weapons. Many are capable of conducting simple, small-scale attacks, such as poisonings, or using improvised chemical devices."<sup>4</sup> Fears that terrorist organizations are interested in acquiring and using WMD justify the current emphasis on choking the demand side from this particular family of non-state actors.

States around the world are now required under international law to mount intensive counterproliferation efforts aimed at preventing WMD proliferation to terrorist organizations. UNSC Resolution 1540 directs that all members "shall refrain from providing support to non-State actors that attempt to develop, acquire, manufacture, possess, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery." States are further called upon to "adopt and enforce appropriate effective laws which prohibit any non-State actor to manufacture, acquire, possess, develop, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery, in particular for terrorist purposes."<sup>5</sup> The issue facing the international community as it contemplates the 2016 proliferation environment is whether focusing states on UNSC

resolution 1540 and the PSI as a means to deny WMD technology and materials to terrorist groups addresses the full range of proliferation threats posed by a widening array of non-state actors.

It is a mistake to assume that terrorist organizations constitute the only or even the most threatening facet of the impact that non-state actors are likely to play in the 2016 proliferation environment. The nuclear “Wal-Mart” supply network organized by Pakistani scientist A. Q. Khan, which spanned industrial entities, shipping networks, and states around the globe, sprung from a sophisticated network of non-state actors, knitted together by a quasi-state entity operating on the fringes of official government control.<sup>6</sup> Trends in the international system suggest that networked structures like that of A. Q. Khan engaged in nefarious proliferation activities potentially constitute a far more serious threat to international security than millennial extremist groups dedicated to mass casualty attacks using unconventional weapons.

Today’s focus on the “demand side” of WMD proliferation stemming from terrorist groups is arguably misguided and needs to be rethought in order to address more fully the complexities of the 2016 WMD proliferation threat posed by the entire family of non-state actors. States and international export-control regimes should be reoriented to address the role that an increasing number of non-state actors play in both the demand and supply side of the WMD proliferation environment. The first step is to broaden the conceptualization of non-state actors, realizing that a growing number of non-state actors are exerting increasing influence over the international system writ large as part of the processes of globalization. Only by broadening and deepening our understanding of the challenges posed by the “community” of non-state actors, can states craft a more effective approach to export controls and counterproliferation in 2016.

### **Globalization and Non-State Actors**

The burgeoning scholarly literature on globalization notes the virtual explosion in the numbers and types of non-state actors populating the international system, many of which are operating on the fringes of state control or under the auspices of states that lack adequate nationally administered export control regimes.<sup>7</sup> Multinational corporations, nongovernmental and quasi-governmental organizations, and transnational social movements all represent examples of a growing number of organizational structures that operate across borders on a global scale. International nongovernmental organizations (defined as operating in more than three countries) engaged in advocacy or direct action have grown from an estimated 985 in 1956 to more than 21,000 in 2003. According to the Global Policy Forum, nongovernmental organizations of all types numbered above 37,000 by the year 2000, representing a nearly 20-percent growth over the previous 10 years.<sup>8</sup> The United Nations estimated in 2004 that there were a total of 61,000 transnational corporations with as many as 900,000 foreign affiliates around the world.<sup>9</sup> As indicated in Table 1, the growth of these non-state groups comes in a global environment characterized by the dramatic growth in global economic production, worldwide trade, foreign direct investment inflows and outflows, and the trend toward transnational and networked industrial conglomerates.

**TABLE 1**

Selected Indicators of Foreign Direct Investment (FDI) and International Production, 1990, 2003, 2004 (billions of dollars)

Item	1990	2003	2004
FDI inflows	208	633	648
FDI outflows	239	617	730
FDI inward stock	1,769	7,987	8,902
Cross-border M&As	151	297	381
Sales of foreign affiliates	5,727	16,963	18,677
Total assets of foreign affiliates	5,937	32,186	36,008
World GDP (current prices)	22,610	36,327	40,671
World exports	4,261	9,216	11,069

Source: Adapted from: United Nations Conference on Trade and Development, World Investment Report 2005: Transnational Corporations and the Internationalization of R&D, <[www.unctad.org/en/docs/wir2005\\_en.pdf](http://www.unctad.org/en/docs/wir2005_en.pdf)>.

Within the global environment as described in Table 1, non-state actors play a critical role in facilitating the accelerating movement of global stocks and flows, acting in both the supply and demand sides of the growing global economy. Insofar as the nuclear proliferation environment is concerned, non-state actors today fill the same sorts of functions, shaping the forces of market supply and demand for the commoditized materials used in nuclear weapons production. Table 2 describes various kinds of non-state entities that interact in the supply and demand sides of the WMD proliferation environment. All of these non-state entities interact in what can be described as a "substructure" of the proliferation environment, which, while currently dominated by states, may see a dynamic all its own emerge by 2016.

The non-state proliferation market substructure includes at least four characteristics: (1) legitimate trade in dual-use items that can be used and diverted for nonconventional and nuclear weapons programs administered by states and non-state actors; (2) front companies and subsidiaries of quasi-governmental organizations in states such as Iran and Pakistan that are circumventing export controls on their indigenous nuclear programs, as well as state-run organizations that are either facilitating the selling, buying, or smuggling of WMD materials or are engaged in marketing to create demand for their wares; (3) illicit smuggling networks in radioactive materials administered by states, transnational criminal organizations, and/or terrorist organizations in cases where proscribed WMD materials are being transferred; and (4) servicing demand by these illicit networks from violent non-state actors that seek unconventional and conventional weapons that can be used for tactical, operational, and strategic effects.

Various aspects of the emerging proliferation market substructure were on display with the A.Q. Khan network and are ongoing with smuggling networks moving radioactive materials through Central Asia.<sup>10</sup> As the Khan network demonstrated, while it is difficult to procure turnkey reprocessing facilities from non-state actors, it is now possible to subcontract production offshore to unsuspecting transnational corporations. The smuggling networks in Central Asia show that it is possible to move highly enriched uranium

**TABLE 2**

Non-State Actors and 2016 WMD Proliferation Supply-Demand

Non-State Typology	Supply-Side WMD	Demand-Side WMD
Industrial Entities	Provide transnationally-based networks to service demand from state- and non-state and quasi-state groups. In the pre-2000 environment, the overwhelming demand was for turnkey operations. The 2016 environment may feature a more “subcontracted” approach to supply like that in the A. Q. Khan supply and distribution network.	None, except to satisfy legitimate trade in dual-use materials.
Quasi-Governmental Organizations	Organizational structures like Pakistan’s Atomic Energy Commission and Korean Workers Party Bureau 39 in the DPRK, Iran Revolutionary Guard Corps in Iran, NORINCO in China can operate outside formal governmental control. These organizations can use state-run production companies for WMD supply purposes.	Can also serve as marketing agents to actively “create” demand for products or can seek to acquire capabilities for themselves.
Non-Governmental Organizations	Potential unwitting role as masking agent for quasi-governmental or state-run WMD proliferation activities.	None
Violent Non State Actors	Supply-Side WMD	Demand-Side WMD
Warlords and Militias	Potential role in serving as subcontractors and transit facilitators for larger networks.	Seek unconventional capabilities as part of competitive process with rival warlords or states.
Transnational Criminal Organizations	Service illicit markets in nuclear and other WMD materials due to perceived value of the assets.	Perception that WMD materials have intrinsic value stimulates demand for illicit trade.
Transnational or Nationally Based Terrorist Groups	While the Japanese terrorist group Aum Shinrikyo built an extensive biological and chemical production infrastructure, the calculation on the supply side for terrorist groups remains: Why build it if you can buy it? That said, a variety of terrorist attacks reportedly involving chemical weapons have been disrupted in the 2001–2006 period.	Seek unconventional attack options as part of enhancement of group capabilities either for negotiating leverage or for simple desire to inflict mass casualties. For example, Al Qaeda is widely reported to have attempted to buy nuclear warheads in Central Asia.

<sup>1</sup>Role of Korean Workers Party Bureau 39 in regime-sanctioned smuggling activities as noted by Sheena Chestnut, “North Korean Smuggling Networks: Illicit Activities and Proliferation,” Presentation at the Naval Postgraduate School Conference titled “Terrorism, Transnational Networks and WMD Proliferation: Indications and Warning in an Era of Globalization,” July 25–27, 2006, Monterey, California. Also see Daniel Pinkston, “Domestic Politics and Stakeholders in the North Korean Missile Development Program,” *Nonproliferation Review* 10 (Summer 2003), for a description of the role that the KWP apparatus plays in North Korea’s missile export activities.

through illicit channels to meet customer demand from around the world. These phenomena illustrate the many roles played by non-state actors in shaping the emergent proliferation market substructure.

### Industrial Entities

All of the 20th century major state-run proliferation activities that circumvented export control regimes involved companies from around the world. Proscribed activities in state-run programs in Israel, Egypt, Iraq, Iran, South Africa, and Pakistan knitted together transnational procurement networks from both witting and unwitting companies. Whether it was centrifuges, metal-working lathes, steel fermentation tanks, oscilloscopes, growth media, chemicals, or any other material used to produce WMD, all these materials came from industrial suppliers. The Khan network made clever use of offshore companies, such as Scomi Precision Engineering in Malaysia, to manufacture centrifuges for the Libyan nuclear program. In fact, most new WMD programs have benefited from sophisticated uses of witting and unwitting companies as suppliers from around the world.

Iraq's biological warfare plant at Al Hakam—discovered by the UN Special Commission on Iraq inspectors, in part as a result of the defection of Hussein Kamel in 1995—featured equipment bought from a variety of European suppliers. Iraq's chemical weapons development program similarly featured a great deal of equipment bought from several well-known European companies, such as the German company Karl Kobe, and chemical precursors from companies in Singapore and Holland. The Iraq Survey Group discovered a thriving illicit business in proscribed WMD-relevant materials during the 1990s from companies based in as many as 14 countries around the world, including Ukraine, South Korea, France, Belarus, Romania, Jordan, the People's Republic of China, Syria, and the United Arab Emirates.<sup>11</sup> To facilitate the acquisition of WMD-related technology and components, Iraq established a procurement network of more than 200 front companies, some of which were used for only one transaction. Like the Iraq program, South Africa's state-run program to develop nuclear weapons featured a sophisticated network of suppliers drawn from around the world such as Leybold Heraeus, which also supplied nuclear components for uranium enrichment to Iraq, Pakistan, and Iran before 1990.<sup>12</sup> Moreover, some South African companies were involved in the Khan network and attempted unsuccessfully to manufacture components for Libya's program.<sup>13</sup>

The aforementioned examples illustrate the broader challenge to the managers of export control regimes and other governmental nonproliferation policymakers as they seek to manage the supply-side proliferation challenge from a variety of non-state actors, which will continue to grow in number and sophistication through 2016 and beyond. The supply-side activities of multinational corporations will continue to be a shaping force in the WMD proliferation market as the global diffusion of technology and information continues to accelerate through the next decade.

## Quasi-Governmental Organizations

A prominent feature of many of the proliferation activities of perennial offender states, such as China, North Korea, Ukraine, and Iran, is the involvement of organizations that are obliquely tied to the state itself. The growth in so-called quasi-governmental organizations around the world has paralleled the growth of the non-state industrial actors described above. The Congressional Research Service defined quasi-governmental organizations as "entities that have some legal relation or association, however tenuous, to the federal government, or to the terrain that putatively exists between the governmental and private sectors."<sup>14</sup> The United States, for example, boasts a wide array of quasi-governmental organizations, including nonprofit organizations such as the U.S. Institute for Peace, financial entities such as Fannie Mae and the Overseas Private Investment Corporation, as well as federally funded research and development centers such as the RAND Corporation, to name but a few. These hybrid entities are becoming more prevalent around the world to help governments provide a widening variety of public- and private-sector services to citizens and industries alike.<sup>15</sup> Not surprisingly, quasi-governmental organizations have become involved in the security-related functions that previously had been the exclusive preserve of states.

The involvement of the China North Industries Corporation, or NORINCO, in Iraq's illicit WMD-related activities during the 1990s illustrates the problem that can arise when entities loosely affiliated with the government start acting on their own volition. NORINCO is not officially part of the Chinese government, though a Chinese government entity is responsible for its oversight: the Commission on Science, Technology and Industry for National Defense. According to U.S. arms inspectors in Iraq, NORINCO supplied the Iraqi armed forces with a wide variety of military and WMD-related equipment, including gyroscopes intended for Iraq's missile program, apparently without the knowledge of the Chinese government. Inspectors found that Iraq had run up a debt of more than \$3 billion to NORINCO, much of which was for materials that had been transferred without the knowledge of the Chinese government. In the period before the 2003 Gulf War, Iraq was attempting to structure repayment of its debt to NORINCO through the supply of oil, an arrangement NORINCO specifically wanted to keep secret from the Chinese government.<sup>16</sup> In marketing its wares to Iraq and other customers outside of direct state control, NORINCO acted like any multinational corporation that seeks to stimulate demand for its products.

Another example of a quasi-governmental organization in a state known to have active WMD programs is Iran's Revolutionary Guard Corps (IRGC). The IRGC conducts many important security-related functions within the fragmented Iranian bureaucratic system of governance. The Corps is not formally part of the Iranian military, and it is unclear what state entities outside the ruling council exercise oversight over IRGC activities. This is troubling, given the range of programs over which the IRGC is understood to exercise control. According to Middle East military analyst Anthony Cordesman, "The IRGC's growing involvement in Iran's military industries, and its lead role in Iran's efforts to acquire surface-to-surface missiles and weapons of mass destruction, give it growing experience with advanced military technology. As a result, the IRGC is believed to be the

branch of Iran's forces that plays the largest role in Iran's military industries."<sup>17</sup> The Iranian elected president's control over the IRGC has always been shaky. During the 1990s, the United States repeatedly attempted to convince the Iranian government to stop IRGC support for Iraq's gas oil-smuggling operations in the Persian Gulf. In that case, as well as others, the IRGC operated well outside the control of Iran's parliament and presidency.

The IRGC is also intimately involved in Iran's support for Hizballah and other terrorist organizations. To date, the IRGC has shown no inclination to transfer WMD-related materials to these clients. But a 2016 environment potentially featuring additional fragmentation in an already decentralized Iranian governing structure could lead to a repeat of the IRGC's freelancing activities in the 1990s, when it simply charged Saddam's oil smugglers tolls to pass their goods through Iranian territorial waters. The IRGC is an example of a quasi-governmental organization that at this point mostly interacts on the demand side of the WMD proliferation market. But as Iran's WMD programs mature and as its indigenous production capabilities become larger and more sophisticated, the IRGC could be positioned also to interact on the supply side as either an arm of the state or as an independent actor.

The lessons of the Iranian and Iraqi WMD programs point to the significant role quasi-governmental organizations can play in WMD proliferation activities. As the process of global state fragmentation continues, and as countries like China and Iran continue the inexorable process of political evolution, the spaces and opportunities for nefarious activities by quasi-governmental organizations will only increase. This will create a fundamentally new supply environment for nuclear proliferation in the coming decades.

### **Violent Non-State Actors**

Governments are most worried about the prospect of WMD use by terrorist groups. But terrorist organizations are only one type of a broader category of violent non-state actors, a formidable array of adversaries that have caused many of the humanitarian and political crises confronting states in the early 21st century. As observed by Troy Thomas, Stephen Kiser, and William Casebeer in *Warlords Rising: Confronting Violent Non-State Actors*:

A sample from across today's geopolitical landscape reveals a Hamas suicide bomber haunting the streets of Jerusalem, Nepalese Maoists launching another round of bombings in Kathmandu, and Indonesian terrorist groups and human traffickers exploiting the horrific aftermath of the December 2004 tsunami. As non-state armed groups gain greater access to resources and networks through global interconnectivity, they have also come to dominate the terrain of illegal trade in guns, drugs, and humans. The broad spectrum of objectives and asymmetric methods of these contemporary assassins and Barbary pirates fractures our traditional conceptions of war and peace. Whether concerned about national security or human security, the warlords of the modern era pose a pressing challenge for which the nation-state is ill equipped.<sup>18</sup>

The advent of violent non-state actors is tied by many analysts to the ineluctable processes of globalization and the durable disorder of international politics that has resulted from what political scientist James Rosenau describes as "framgregation," or the simultaneous



interaction of localizing and globalizing dynamics that are destabilizing states around the world.<sup>19</sup> According to one authoritative source, the Fund for Peace, as many as 60 states with a combined population of two billion people are in danger of collapse.<sup>20</sup> For this estimate, “A state is failing when its government is losing physical control of its territory or lacks a monopoly on the legitimate use of force. Other symptoms of state failure include the erosion of authority to make collective decisions, an inability to provide reasonable public services, and the loss of the capacity to interact in formal relations with other states as a full member of the international community.”<sup>21</sup> The trend of failing states—with the attendant rise in ethnocentric, sectarian, and religious conflict—almost certainly will continue through 2016 and beyond. Violent non-state actors are flourishing and will continue to grow in a global environment where states are fragmenting or are proving unable to fully control the activities of actors within their borders.

Such a global environment would be a big opportunity market for warlords, criminals, and terrorist organizations. For our purposes, warlords are defined as actors that exercise *de facto* social and political control through military means in a distinct subnational geographic area either in cooperation with, in defiance of, or in lieu of a functioning state structure. Terrorist organizations are those groups that seek to use the threat or the application of indiscriminate violence to achieve a political objective. Transnational criminal organizations operate within the violent non-state actor family, and here are defined as criminal networks spanning a variety of countries engaged in illegal activities in contravention of state-administered laws.<sup>22</sup>

Each of these actors will interact in different ways in the supply-and-demand side of the 2016 WMD proliferation market. First, violent non-state actors can help service the demand from states and non-state-based clients that need access to illicit smuggling networks to hide proscribed activities. There is a natural overlap between terrorist organizations and criminal networks and activities.<sup>23</sup> The tendency of terrorist organizations to engage in criminal activities as money-making ventures to support other operations is well documented, particularly their involvement with drug traffickers in South America. Moreover, Al Qaeda helped finance its operations through a global business empire of sorts that allegedly involved diamond smuggling in West Africa, construction projects in Sudan, and sales of honey and perfume on the Arabian Peninsula. The illicit networks and criminal activities can potentially serve as useful structures for WMD proliferation activities, particularly related to nuclear and radiological materials. Most nuclear smuggling incidents involve low-level radioactive materials suited for radiological devices—just the thing that various terrorist groups have coveted.

Over the past 13 years, the International Atomic Energy Agency has documented 16 incidents of trafficking or other unauthorized uses of highly enriched uranium and plutonium.<sup>24</sup> Only a few of these incidents involved significant quantities of weapons-grade nuclear material. There are many more cases of illicit trade in low-level nuclear and radiological materials. During the reporting period of 1993–2005, states reported 827 incidents of illicit trafficking in low-level nuclear materials, much of which originated in Russia and the former Soviet republics. It is unclear who the customers are for these materials, and there are no indications to date in open sources that terrorist groups or

warlords are taking advantage of illicit nuclear smuggling networks to fabricate their own weapons.

The relevance of this trade to the 2016 nuclear proliferation market is that illicit networks could provide a supply-side service in commoditized materials that have perceived value to selected customers. If some customers are willing to pay for nuclear materials, transnational criminal organizations will more than likely service the market using illicit smuggling networks. The demand for these materials can come from a variety of sources: terrorist groups seeking mass-casualty attack capabilities for bargaining leverage or for actual use and warlords who might desire WMD to defend their territories from encroachment by rival warlords or states. The functioning of these illicit smuggling networks creates the possibility that a variety of non-state actors might simply accumulate materials to produce nuclear weapons or other WMD because of the perceived value of the traded items, stockpiling them for their own use or to resell them to other states or non-state parties.

Recent history suggests that violent non-state actors will operate on both the demand and supply sides of the WMD proliferation market. While the overwhelming preference for today's terrorist groups is to buy existing WMD, there are disturbing trends that suggest some are also intent on fabricating their own devices. To date, there is only one example of an international terrorist group that successfully established a WMD infrastructure to weaponize chemical and biological agents. While the Japanese terrorist group Aum Shinrikyo spent millions in the 1990s establishing a transnational WMD production infrastructure, the group proved only partially successful in producing weaponizable chemical agents. The inherent difficulties in producing chemical, biological, and especially nuclear weapons suggests that violent non-state actors will play a more important role on the demand side of the proliferation market substructure. This is true in today's environment in which Al Qaeda, for example, is rumored to have repeatedly attempted the purchase of nuclear warheads in Central Asia.<sup>25</sup>

Violent non-state actors, however, remain capable of operating on the supply side and some are still attempting to weaponize their own devices. Law enforcement and counterterrorist operations have disrupted several suspected plots by Al Qaeda-affiliated groups to use chemical and biological agents in: (1) Rome, in February 2002, when authorities disrupted a plot to poison the water supply of the U.S. Embassy in Rome with cyanide; (2) London, in January 2003, when police raided what was thought to be a cell of Al Qaeda suspects intent on producing ricin poison; and (3) Amman, in April 2004, when the Jordanian Intelligence Service seized six trucks wired with explosives and containing 20 tonnes of an unknown chemical reportedly intended to destroy the intelligence service's building, the Prime Minister's office, and the U.S. Embassy.<sup>26</sup>

The ability of violent non-state actors and/or individuals to construct their own unconventional weapons cannot be dismissed. A cautionary tale is told from the still unsolved U.S. anthrax attacks in the fall of 2001 in which a highly trained individual or group of individuals produced, weaponized, and delivered anthrax. In April 2003 Texas investigators discovered a homemade sodium-cyanide bomb in the garage of the white supremacist William Krar, which was capable of killing inhabitants in an enclosed space the size of a small civic center.<sup>27</sup> Krar was discovered only when a package containing fake

identification cards for the Defense Department and the United Nations was inadvertently delivered to a New York City address and the recipient mistakenly opened the contents. While the overwhelming tendency is for violent non-state actors to play on the demand-side of WMD proliferation in 2016, the continuing efforts of these groups and/or individuals to supply their own devices cannot be discounted.

## Conclusion

Given that a variety of non-state actors will play important roles in the 2016 WMD proliferation market, the international community must broaden and deepen its understanding of these actors if it is to craft effective export control regimes to address the nuances of this market. The immutable forces of globalization and the continuing diffusion of technology, facilitated in large part by non-state actors, ensure that there will be ample opportunity for states and non-state actors to engage in dangerous proliferation activities. The prospect of continued state fragmentation will open seams and gaps for non-state actors in the already loosely constructed network of export controls, further complicating the 2016 proliferation environment.

While the current focus on denying WMD to terrorist organizations is a necessary and useful start, the international community should undertake a much more comprehensive and holistic view of how non-state actors operate in all aspects of WMD proliferation. Peeking over the cliff's edge and into the 2016 proliferation abyss leads to the inescapable conclusion that the problem is much more complicated and much worse than generally is believed. Structural developments in the international system suggest that the A.Q. Khan transnational nuclear proliferation network represents a precursor to a new and very unwelcome world of nuclear proliferation. A world of WMD one-stop shopping involving quasi-state organizations and transnational corporations that service states, warlords, and terrorist groups using legitimate dual-use trade in addition to illicit networks presents a profound and serious threat to international security in 2016 and beyond.

## NOTES

1. See Colin Gray, "How Has War Changed Since the End of the Cold War," *Parameters* 35 (2005), pp. 14–26; and Ryan Henry, "Defense Transformation and the 2005 Quadrennial Defense Review," *Parameters* 35 (2005), pp. 5–15.
2. The White House, *The National Security Strategy of the United States of America*, Sept. 2002, <[www.whitehouse.gov/nsc/nss.html](http://www.whitehouse.gov/nsc/nss.html)>.
3. John Lehman, "We're Not Winning This War," *Washington Post*, Aug. 31, 2006, p. A25.
4. "Annual Threat Assessment of the Director of National Intelligence for the Senate Armed Services Committee," Washington, DC, Feb. 28, 2006, <<http://intelligence.senate.gov/0602hr/060202/negroponte.pdf#search=%22Annual%20Threat%20Assessment%20of%20the%20Director%20of%20National%20Intelligence%22>>.
5. UN Security Council (UNSC) Resolution 1540, April 28, 2004, <<http://daccessdds.un.org/doc/UNDOC/GEN/N04/328/43/PDF/N0432843.pdf>>.

6. Christopher Clary, "A.Q. Khan, Proliferation Networks, and the Nuclear Slippery Slope," in James A. Russell, ed., *Proliferation of Weapons of Mass Destruction in the Middle East* (New York: Palgrave MacMillan, 2006), pp. 93–114. Also see David Albright and Corey Hinderstein, "The A.Q. Khan Illicit Nuclear Network and Implications for Nonproliferation Efforts," *Strategic Insights* 5 (July 2006), <[www.ccc.nps.navy.mil/si/2006/Jul/albright Jul06.asp](http://www.ccc.nps.navy.mil/si/2006/Jul/albright%20Jul06.asp)>.
7. Kim Reimann, "A View from the Top: International Politics, Norms and the Worldwide Growth of NGOs," *International Studies Quarterly* 50 (2006), pp. 45–67.
8. Global Policy Forum Web Site, <[www.globalpolicy.org/ngos/role/intro/growth2000.htm](http://www.globalpolicy.org/ngos/role/intro/growth2000.htm)>.
9. United Nations Conference on Trade and Disarmament, *World Investment Report 2004: The Shift Towards Services* (Geneva and New York: UN, 2004), <[www.unctad.org/Templates/WebFlyer.asp?intItemID=3235&lang=1](http://www.unctad.org/Templates/WebFlyer.asp?intItemID=3235&lang=1)>.
10. Lyudmila Zaitseva, "Organized Crime, Terrorism and Nuclear Trafficking: DSTO Case Study 2001–2005," presentation to the conference on "Terrorism, Transnational Networks, and WMD Proliferation: Indications and Warning in an Age of Globalization," Naval Postgraduate School, Monterey, California, July 25–27, 2006. See also Sonia Ben Ouagrham and Dennis Gormley, "Trafficking in WMD Materials in Central Asia and the Caucasus: I&W Implications," presentation to the conference on "Terrorism, Transnational Networks, and WMD Proliferation."
11. See details in Central Intelligence Agency (CIA), *Comprehensive Report of the Special Advisor to the DCI on Iraq's WMD*, Sept. 30, 2004, particularly Annex 1, <[www.cia.gov/cia/reports/iraq\\_wmd\\_2004/](http://www.cia.gov/cia/reports/iraq_wmd_2004/)>.
12. Details in Sara Kuepfer, "The Shady Side of Nuclear," *International Relations and Security Network*, Aug. 23, 2006, <[www.isn.ethz.ch/news/sw/details.cfm?ID=16564](http://www.isn.ethz.ch/news/sw/details.cfm?ID=16564)>.
13. Stephen Burgess, "South Africa From the Perspective of WMD Supply Networks," presentation to the conference on "Terrorism, Transnational Networks, and WMD Proliferation," Naval Postgraduate School, Monterey, California, July 25–27, 2006. Cited with author's permission.
14. Ronald C. Moe and Kevin R. Kosar, "The Quasi Government: Hybrid Organizations with Both Government and Private Sector Legal Characteristics," Congressional Research Service Report for Congress, Library of Congress, Washington, DC, May 18, 2005, p. 2, <[www.fas.org/sgp/crs/misc/RL30533.pdf](http://www.fas.org/sgp/crs/misc/RL30533.pdf)>.
15. Jonathan Koppell, *The Politics of Quasi Government: Hybrid Organizations and the Dynamics of Bureaucratic Control* (Cambridge, UK: Cambridge University Press, 2003).
16. CIA, *Comprehensive Report of the Special Advisor*, annex 1.
17. Anthony Cordesman, "Iran's Developing Military Capabilities," Center for Strategic and International Studies, Washington, DC. Dec. 8, 2004, p. 16, <[www.csis.org/media/csis/pubs/041208\\_irandevmilcap\[1\].pdf](http://www.csis.org/media/csis/pubs/041208_irandevmilcap[1].pdf)>.
18. Troy Thomas, Stephen Kiser, and William Casebeer, *Warlords Rising: Confronting Violent Non-State Actor* (Lanham, MD: Lexington Books, 2005), p. 2.
19. James Rosensau, "New Dimensions of Security: The Interaction of Localizing and Globalizing Dynamics," *Security Dialogue* 25 (1994), pp. 255–81. On the impact of

- globalization on international security, also see Philip Cerny, "Terrorism and the New Security Dilemma," *Naval War College Review* 58 (2005), pp. 10–33.
20. *Foreign Policy* and the Fund for Peace, "The Failed State Index," July/Aug. 2005, <[www.foreignpolicy.com/story/cms.php?story\\_id=3098](http://www.foreignpolicy.com/story/cms.php?story_id=3098)>.
  21. "The Failed States Index of FAQ," *Foreign Policy* Web Site, <[www.foreignpolicy.com/story/cms.php?story\\_id=3111](http://www.foreignpolicy.com/story/cms.php?story_id=3111)>.
  22. Like many of these terms, there is no generally accepted definition of transnational criminal organizations. The only common ground between various definitions is that the crimes are perpetrated by organized networks in a variety of different countries. John Wagley, "Transnational Organized Crime: Principal Threats and U.S. Responses," Congressional Research Report for Congress, Library of Congress, Washington DC, March 20, 2006.
  23. Louise Shelley, "The Unholy Trinity: Transnational Crime, Corruption and Terrorism," *Brown Journal of World Affairs* 11 (2005), pp. 101–11. Also see Phil Williams, "Transnational Criminal Organisations and International Security," in John Arquilla and David Ronfeldt, eds., *In Athena's Camp: Preparing for Conflict in the Information Age* (Santa Monica, CA: RAND, 1997), pp. 315–37.
  24. IAEA, "Illicit Trafficking and Other Unauthorized Activities Involving Nuclear and Radioactive Materials," Aug. 21, 2006, <[www.iaea.org/NewsCenter/Features/RadSources/PDF/fact\\_figures2005.pdf](http://www.iaea.org/NewsCenter/Features/RadSources/PDF/fact_figures2005.pdf)>.
  25. Center for Nonproliferation Studies, Monterey Institute for International Studies, "Al Qaeda's WMD Activities [chart]," updated May 13, 2005, <[http://cns.miis.edu/pubs/other/sjm\\_cht.htm](http://cns.miis.edu/pubs/other/sjm_cht.htm)>.
  26. Ibid.
  27. Chris Axtman, "The Terror Threat at Home, Often Overlooked," *Christian Science Monitor*, Dec. 29, 2003, <[www.csmonitor.com/2003/1229/p02s01-usju.html](http://www.csmonitor.com/2003/1229/p02s01-usju.html)>; Michael Reynolds, "Homegrown Terror," *Bulletin of the Atomic Scientists* 60 (Nov./Dec. 2004), pp. 48–57, <[www.thebulletin.org/article.php?art\\_ofn=nd04reynolds](http://www.thebulletin.org/article.php?art_ofn=nd04reynolds)>.